

A GLOSSARY

COMPILED FROM THAT OF DR. W. T. S. CORNETT, IN THE THIRTEENTH ANNUAL REPORT OF THIS DEPARTMENT,
AND OTHER SOURCES.

BY S. E. LEE.

ACCRETION. The process by which inorganic bodies grow larger, by the addition of fresh particles from the outside.

ACOTYLEDON. A plant in which the seed-lobes (cotyledons) are not present, or are indistinct, like the fern, lichen, and most of the coal plants.

ACROGENS. Plants which increase in height by additions made to the summit of the stem by the union of the bases of the leaves. The highest tribe of *Cryptogams*, such as *Sigillaria*, *Lepidodendria*, *Calamites*, *Ferns*, etc.

ACTINOLITE. A variety of hornblende which usually occurs in fascicular crystals.

ACUMINATA. Pointed; peaked.

ACUTA. Sharp pointed.

ACUTICOSTA. Having sharp or pointed lobes.

AEROLITE. A stone or other body which has fallen from the air, or more correctly, has come to the earth from distant space; a meteorite.

AGATE. A semi-pellucid, uncrystallized quartz.

AGGLOMERATE. To gather together.

ALIFORMIS. Wing-shaped.

ALBITE. A variety of feldspar.

ALGÆ. Marine plants, comprising the seaweeds and many fresh-water plants.

ALLUVIUM. Earth, sand, gravel, loam, vegetable mold, etc., washed down by streams and floods, and deposited upon formations not permanently submerged.

ALUMINA. A characteristic ingredient of common clay.

ALUMINOUS. Pertaining to or containing alum, or alumina. The clay slates are very frequently impregnated with alum, and are then called alum-slates or alum-shales.

ALVEOLATUS. Having a surface covered with numerous depressions, comparable to the alveoli or sockets of the teeth.

AMBLYPTERUS. A fossil fish.

AMMONITE. An extinct genus of *Cephalopoda*, like the Nautilus, found in the Secondary or Mesozoic rocks; so called from the resemblance of its shell to the horns of Jupiter-Ammon.

AMORPHOUS. Bodies devoid of regular or determinate form. A name sometimes used to designate the sponges.

AMPHIBIA. Animals capable of living either in water or on land, like the frogs, newts, lizards, turtles, certain serpents, etc.

AMPHIBOLE. Variety of hornblende.

AMPLEXUS. Generic name of a fossil.

AMYGDALOID. A rock in which crystallized minerals are scattered in almond-shaped cavities.

ANASTOMOSED. Branching and interlacing.

ANDALUSITE. A mineral first observed in Andalusia, in Spain. It is very hard and infusible and consists chiefly of alumina and silica. Chiastolite.

ANGLE OF DIP. Angle formed with plane of the horizon.

ANHYDROUS. Without water.

ANNELIDES. Animals having an external integument formed of rings.

ANNULAR. Shaped like a ring.

ANNULARIA. Generic name of a fossil plant.

- ANODONTA.** Systematic name of a kind of mussel.
- ANTICLINAL.** The crest or line from which strata dip in opposite directions.
- APEX.** Summit or tip of the spire of a shell.
- ARBORESCENT.** Branching like a tree.
- ARCUATA.** Arched; bent like a bow.
- ARENACEOUS.** Sandy; of the nature of sand.
- ARGENTIFEROUS.** Producing silver.
- ARGILLACEOUS.** Clayey; composed in whole or in part of clay.
- ARTICULATA.** Animals characterized by the possession of jointed bodies or jointed limbs.
- ARTICULATION.** A joint betwixt bones or portions of crustations.
- ASAPHUS.** A name devised to express the obscure nature of a genus of trilobites, fossil crustaceans.
- ASAR, ESKER.** A long, narrow, sharp ridge of gravel and sand, with some associated boulders, parallel with the ice movement or lines of drainage.
- ASBESTUS.** A fibrous soft mineral composed of easily separable filaments of a silky luster. It consists essentially of silica, magnesia and lime.
- ASTARTE.** Name of a genus of fossil bivalve shell.
- ASTREA.** A genus of polyparia.
- ATTENUATED.** Made slender or thin.
- AUGITE.** A mineral, the same as pyroxene.
- AUGITIC-PORPHYRY.** Crystals of Labrador feldspar and of augite in a green or dark-gray base.
- AURIFEROUS.** Containing gold.
- AVICULA.** Name of a genus of bivalve mollusks.
- AXIS OF ELEVATION.** Line of elevation.
- AZOIC ROCKS.** Rocks formed before the existence of organic life, or, at least of animal life, consequently destitute of fossil remains.
- BASALT.** A rock essentially composed of feldspar and augite, of a compact texture, and dark green, gray or black color. It occurs in columnar masses.
- BASSET.** Outcrop, or emergence of strata at the surface.
- BASIN.** An isolated or circumscribed formation, particularly where the strata dip inward, on all sides, toward the center. Especially applied to the coal formations, called "coal-basins" or "coal-fields."
- BATRACHIA.** The order of reptiles which includes the frog and related animals.
- BEAK.** The continuation of univalve shells in which the canal is situated, or the extreme point of the summit of bivalves.
- BELEMNITES.** A genus of fossils dibranchiate Cephalopods.
- BELLEROPHON.** A genus of *Gasteropoda*, having a univalve shell, found in the Paleozoic rocks.
- BIFURCATED.** Divided into two branches.
- BITUMEN.** A variety of inflammable mineral substances, which, like pitch, is included under this term.
- BITUMINOUS SHALE.** Shale impregnated with bitumen; usually of a dark brown or black color.
- BIVALVE.** Consisting of two plates or valves, hinged together by an elastic ligament.
- BLENDE.** Sulphuret of zinc; a common shining zinc ore.
- BOSSE.** A hillock; a rounded projection or elevation.
- BOWLERS.** Rocks rounded or otherwise, which have been transported from more or less distant localities by natural agencies, especially during the Drift period.
- BOWLDER CLAY.** The stiff, unlaminated clay of the Drift period.
- BRACHIOPODA.** A class of marine mollusks, characterized by two fleshy arms, continued from the sides of the mouth, and which served to create currents to bring them food.
- BRECCIA.** A rock composed of an agglutination of angular fragments.
- BUCCINUM.** A trumpet or horn. Name of a genus of mollusks.
- CALAMITE.** Extinct plants, with reed-like stems, sometimes attaining a diameter of fourteen inches and the height of trees, found almost entirely in the Coal Measures.
- CALCAREOUS.** Consisting of or containing carbonate of lime.
- CALCITE.** Crystallized carbonate of lime. Common limestone, all the white and most of the colored marbles, calc-sinter, calc-spar, calc-tufa, stalactites, and stalagmites are so classified.
- CALC-SPAR.** Calcareous spar.
- CALC-SINTER.** A German term for limestone deposited from springs and water containing it. Travertin.
- CALCEOLA.** A fossil bivalve shell.

- CALCINED.** Converted into calx or a friable substance by the action of fire.
- CALYMENE.** A name of a genus of trilobites.
- CANNÆFORMIS.** Reed-shaped.
- CARAPACE.** A protective shield. The upper shell of the tortoise, turtle, crab, lobster and other *Crustacea*.
- CARBON.** The pure inflammable principle of charcoal. In its state of absolute purity it constitutes the diamond.
- CARBONATE.** A salt formed by the union of carbonic acid with a base.
- CARBONIC ACID.** An acid compounded of carbon and oxygen.
- CARBONIFEROUS.** Producing or containing carbon or coal.
- CARBONIFEROUS AGE.** The one immediately following the Devonian Age, or *Age of Fishes*, and characterized by the vegetables which formed the coal beds. This age is divided into the Subcarboniferous, the Coal Measure and the Permian epochs.
- CARBONIFEROUS PERIOD.** The second, or middle, division of the Carboniferous Age.
- CARBURET.** A combination of carbon with a metal or other substance. Steel and black lead are carburets of iron.
- CARDIUM.** A cockle. A genus of bivalve shells.
- CARINATA.** Carinate, having a keel-like elevation.
- CARINATED.** Shaped like the keel of a ship. Applied to flowers consisting of two petals, either separate or united, inclosing the organs of fructification, and which have a longitudinal prominence like a keel.
- CARNIVOROUS.** Flesh-eating.
- CARPOLITE.** Petrified fruit. Literal meaning, "stone fruit."
- CARYOPHYLLIA.** A genus of *Madrepora*.
- CATENIPORA.** Generic name of a polyp; chain coral.
- CATYLUS, or CATILLUS.** A little dish. A genus of fossil shells.
- CAUDATUS.** Having a tail.
- CAVERNOUS.** Containing hollows excavated.
- CENOZOIC.** Belonging to the Tertiary period, and means "recent life."
- CENTIMETRE.** A French measure of length, equal to .39368 of an inch.
- CEPHALOPODA.** A class of the *Mollusca*, comprising the cuttle-fishes and their allies, and characterized by a distinct head, surrounded by a circle of long arms or tentacles, which they use for crawling and for seizing objects.
- CEPHALASPIS.** A genus of fossil fish.
- CERITHIUM.** A genus of turriculated univalve mollusks, both recent and fossil.
- CEROID.** Wax-like.
- CETACEA.** Name of an order of mammals.
- CHALCEDONY.** A semi-transparent silicious mineral, apparently formed by the infiltration of silicious matter in a state of solution.
- CHALK.** Earthy carbonate of lime.
- CHAMBERED SHELLS.** Those divided into cells by septa, or partitions.
- CHELONIANS.** Animals of the tortoise tribe.
- CHERT.** An impure, massive, flint-like quartz, or hornstone, of various dull shades of color.
- CHLORITE.** A soft, green, scaly mineral, slightly unctuous.
- CHONETES.** A genus of fossil bivalve shells, of the class *Brachiopoda*.
- CINCINNATI GROUP.** The upper division of the Lower Silurian system. Same as *Hudson River Group*.
- CLEAVAGE.** That peculiar structure in rock which admits of its division into scales or layers.
- COAL BASIN.** Depressions formed in the older rock formations, in which coal-bearing strata have been deposited.
- COAL MEASURES.** Strata of coal, with the attendant rocks.
- COELENTERATA.** Proposed by Frey and Lenckhart in place of the old term *Radiata*, for animals having "hollow bowels," which this term literally means.
- COMMUNITED.** Fractured into small pieces.
- CONCENTRIC.** Having a common center.
- CONCHIFERA.** A species of the *Mollusca* having shells with a dorsal hinge, like oysters, clams, mussels, and other ordinary bivalves. Literal meaning, "to bear a shell."
- CONCHOIDAL.** Shell-like
- CONFORMABLE.** Parallel, or nearly so; said of strata which lie in contact,

- CONCRETIONARY.** Made up of concretions.
- CONGLOMERATE.** A rock composed of pebbles cemented together by another mineral substance, either calcareous, siliceous or argillaceous.
- CONIFERA.** The order of the firs, pines and their allies, in which the fruit is generally a "cone" or "fir-apple;" literally, "I carry a cone."
- CONTORTED.** Strata which have been bent or twisted while in a soft and yielding condition.
- COPROLITES.** Fossilized excrements of animals.
- CORAL.** The solid secretion of zoophytes, produced within the tissues of the polyps, and corresponding to the skeleton in higher animals. It consists almost purely of carbonate of lime.
- CORALLINE ZONE.** That zone of marine life which extends from about 90 feet to 300 feet in depth.
- CORALLUM.** The coral or solid part of a zoophyte, whether composed of stone or horn.
- CORDIFORM.** Heart-shaped.
- CORNUTUS.** Horned.
- CORONATA.** Crowned.
- COSTATUS.** Ribbed.
- CRAIG.** A partially compacted deposit of the older Tertiary formation, consisting of sand and shells.
- CRASSATELLA.** A genus of bivalve shells.
- CRASSUS.** Thick.
- CRATER.** The mouth of a volcano.
- CRENATUM.** Crenate; having rounded teeth.
- CRENULATED.** Having the edge cut into small scallops.
- CRETACEOUS.** Having the qualities of chalk; the uppermost or last of the Secondary formation.
- CRINOIDEA.** An order of lily-shaped marine animals, belonging to the sub-kingdom *Radiata*. They generally grow attached to the bottom of the sea by a jointed stem, though some are free.
- CROCODILEAN.** Any animal of the tribe of crocodiles.
- CRUSTACEA.** One of the classes of the *Articulata*, comprising lobsters, shrimps, and crabs, characterized by the possession of a hard shell or crust, covering the body, legs, etc.
- CRYPTOGAMIA.** Name of a class of plants.
- CRYSTAL.** Any inorganic solid of homogeneous structure, bounded by natural planes and right lines symmetrically arranged.
- CUNEIFORM.** Wedge-shaped.
- CUPREOUS.** Belonging to copper.
- CYATHIFORM.** In the form of a cup or drinking-glass, a little widened at the top.
- CYATHOPHYLLUM.** Cup-shaped, rugose corals, very abundant in the rock formations of Indiana.
- CYCLAS.** A genus of gasteropods.
- CYPREA.** A genus of gasteropod mollusks.
- CYPRIS.** Name of a genus of crustaceans.
- CYRENA.** A genus of bivalve mollusks.
- DATA.** Admitted facts.
- DEBRIS.** Broken and detached fragments of rocks, taken as a mass or collectively.
- DEGRADATION.** A gradual wearing down or wasting, as of rocks, banks, and the like, by the action of water, frost, etc.
- DENDRITIC.** Tree-like; branched like a tree.
- DENTATUM.** Dentate; having sharp teeth.
- DENUATION.** The laying bare of rocks by the action of running water, or by removing earth, etc.; also, the excavation of rocks by running waters or by the action of waves.
- DEPOSIT.** Matter precipitated from suspension in water.
- DEPRESSUS.** Pressed; sunk.
- DETRITUS.** Small portions of matter worn off from rocks by attrition.
- DEVONIAN.** Applied to rock strata lying next above the Silurian.
- DEXTRAL.** Rising from right to left.
- DIALLAG.** A mineral of foliated structure easily divisible in one direction, its natural joints and fractures exhibiting a very different luster and appearance.
- DICERAS.** Generic name of a fossil bivalve.
- DICHOTOMOUS.** Dividing by pairs from top to bottom.
- DICHOTOMY.** Dividing regularly by pairs.
- DICOTYLEDONS.** A division of plants according to the natural order.
- DILATATA.** Dilated; swelled out.

DILUVION. } A superficial deposit.
DILUVIUM }

DIORITE. A variety of trap rock consisting of albite and hornblende.

DIP. The downward inclination of strata.

DISCOIDAL. Resembling a disk.

DISINTEGRATION. The act of separating or dividing a whole into parts.

DISSEPIENTS. Partitions dividing cells.

DOLOMITE. Magnesian marble; magnesian carbonate of lime.

DORSAL. Pertaining to the back.

DRIFT. A collection of loose earth, sand, rocks, or bowlders, distributed over a large portion of the earth's surface, especially in latitudes north of 40°, and which have come from the northward, brought thence, mainly, by glacial action.

EDENTATA. An order of animals without teeth.

EMARGINATED. Notched upon the edge or margin.

ENCRINITE. The lily-shaped radiate; crinoid.

ENSIFORM. Saber-shaped.

ENTOMOSTRACANS. A division of the class of *crustacea*.

Eocene. The lowest division of the Tertiary rocks, in which but few specimens of existing shells are found.

EOZOIC. A term used for the oldest fossil-bearing rocks yet known, such as the Laurentian and Huronian of Canada.

EPOCH. The period during which a formation was produced; thus, geologists speak of the Millstone Grit epoch, etc.

EQUISETUM. A genus of plant.

ERODE. To wear away; to corrode.

ESCARPMENT. The steep face presented by the abrupt termination of strata.

EUOMPHALUS. A gasteropod mollusk of circular form.

EXCORIATION. An abrasion; mark of a part having been rubbed from the surface.

EXOGYRA. Not circular. A genus of unimuscular bivalves, allied to the oyster.

FAULT. A sudden interruption of the continuity of strata or veins in the same plane, caused by a crack or fissure.

FAUNA. The animals of any given area or epoch.

FAVOSITES. A kind of fossil coral, having a prismatic structure, closely resembling that of a honey-comb.

FELDSPAR. An important mineral composed of silica, alumina, potash, with traces of lime, and often of oxyd of iron. It enters into the composition of granite.

FERRUGINOUS. Containing iron; also, partaking of the quality of iron.

FIRE-CLAY. Any clay capable of sustaining intense heat without vitrifying. Abundant in the Coal Measures, beneath each coal seam.

FISSILE. Capable of being split, cleft, or divided in the direction of the grain.

FLORA. The system of vegetable species native in a given locality, region, or period; as the Flora of the Coal Measures, etc.

FLUVIATILE. Belonging to rivers; formed by rivers, as fluvial strata.

FLUVIO-MARINE. Formed by the joint action of a river and the sea, as in the deposits at the mouths of rivers.

FOLIATED. Having leaves or leaf-like projections, as foliated shells; composed of thin laminæ or layers, as mica schist, schistose, and the like.

FORAMINIFERA. A minute genus of the *Protozoa*, characterized by having a calcareous shell perforated by numerous pores or foramina.

FORMATION. The series of rocks belonging to an Age, period or epoch, as the Silurian formation and the like.

Fossil. That which may be dug up; the petrified form of a plant or animal in the strata composing the surface of the earth.

Fossiliferous. Containing fossils or organic remains, as fossiliferous rocks.

FUCOIDS. Fossils resembling sea-weeds.

FUSIFORM. Shaped like a spindle; tapering at each end.

FUSILINA. A spindle-shaped *Foraminifer*.

FUSION. The act of melting; state of fusion is being melted.

GALENA. Sulphuret of lead; a compound of sulphur and lead.

GARNET. A mineral consisting of silicates of alumina, lime, iron and manganese.

GAS. The name given to all permanently elastic fluids or airs different from the atmospheric airs.

- GASTEROPODA.** A univalve mollusk, having a fleshy ventral disk, which serves to take the place of feet, as the snail.
- GEMMATION.** The formation of a new individual by the protrusion of any part of an animal or plant, which may then become free or remain connected with the parent stock; budding. Polyps and some other animals reproduced by buds.
- GENERIC.** Relating to genus.
- GENUS.** An assemblage of species possessing certain characters in common, by which they are distinguished from all others.
- GEODE.** A rounded nodule of stone, containing a small cavity usually lined with crystals, sometimes with other matter; the cavity in such a nodule.
- GEOLOGY.** A science which treats of the materials which compose the earth, the methods in which those materials have been arranged, and the causes and modes of origin of those arrangements.
- GLACIER; GLACIAL RIVER.** A field or immense mass of ice, or snow and ice, formed in the region of perpetual snow, and moving slowly down mountain slopes or through valleys, usually bearing along boulders and fragments of rock.
- GNEISS.** A crystalline rock, consisting of quartz, feldspar and mica, but, unlike granite, having these materials arranged in planes, so that it rather easily breaks into coarse slabs or flags.
- GRANULAR.** Consisting of grains.
- GRAPHITE.** A mineral composed of carbon and iron, constituting carburet of iron. It is known as plumbago and black lead.
- GREENSTONE.** A tough variety of trap rock consisting chiefly of hornblende.
- GRYPHEA.** A genus of fossil bivalves.
- GRANITE.** A crystalline rock, of the same materials with gneiss, but differing therefrom in these minerals, being grainy and not stratified.
- GYP SUM.** Sulphate of lime. Plaster of Paris is made from this mineral by calcination.
- HABITAT.** The natural abode or locality of any animal or plant.
- HEMATITE.** Sesqui-oxide of iron. So called because of the red color of the powder.
- HELIX.** A gasteropod mollusk; a snail.
- HINGE.** The point at which bivalve shells are united.
- HEMIPRONITES.** A fossil bivalve shell, sometimes known as the genus *Strep-torhynchus*.
- HETEROCERCAL.** A fish having the vertebral column continued into the upper lobe of the tail, which lobe, on this account, is larger than the lower one. Literal meaning, "A diverse tail." This form prevailed in Paleozoic times.
- HOMOCERCAL.** A fish in which the vertebral column terminates at the commencement of the tail, the lobes of which are symmetrically equal. Literal meaning, "Common tail."
- HORNBLende.** A mineral of dark green or black color, abounding in oxide of iron, and entering into the composition of several of the trap rocks.
- HUDSON RIVER GROUP.** An upper division of the Lower Silurian formation. Same as *Cincinnati Group*.
- HUMUS.** A dark brown substance formed in the soil by the action of air on solid animal or vegetable matter. It is a valuable constituent of soils.
- HYDRATED.** Containing water.
- ICHTHYOLOGY.** The science of the systematic arrangement or classification of fishes.
- IGNEOUS ROCKS.** Resulting from the action of fire, such as lavas, basalt, trap, and the like.
- IMBRICATED.** Lying over each other in regular order, like the scales of a fish and those on the leaf-buds of plants.
- INCRUSTATION.** A covering like a crust.
- INFUSORIA.** Microscopic animals found in water and other fluids, multiplying by gemmation.
- INORGANIC.** Devoid of an organized vital structure. Rocks, minerals and all chemical compounds are inorganic substances.
- IN SITU.** In its original situation. Said of rocks which remain where they were formed.
- INVERTEBRATA.** Animals without a spinal column.
- JASPER.** A silicious mineral of various colors.
- KAME.** A rounded hill or oblong ridge terminating abruptly in a high mound. Composed of gravel and sand, and having its major axis transverse to the Drift movement.

LACERTIAN. The lizard species.

LACUSTRAL. Pertaining to lakes or swamps.

LEVIS. Smooth, bare, bold.

LAGOON. A marsh, shallow pond, or lake, especially one into which the sea flows.

LAMINATED. Consisting of plates, scales or layers, one over another.

LAND-SLIP. The sliding down of a considerable tract of land.

LATERALIS. Lateral.

LINGULA. A little tongue. Name of a genus of bivalves.

LITHOGRAPHIC STONE. Used for the purposes of lithography.

LENTICULAR. Having the form of a double-convex lens.

LEPIDODENDRON. A genus of fossil cone-bearing trees, belonging to the Carboniferous Age, and so called from having their stems marked with scars or scales, produced by the falling off of the leaves.

LIGNITE. Mineral coal showing the texture of wood, and found in the Tertiary formation.

LINE OF BEARING. The direction of the strike, or outcrop.

LINE OF DIP. The line of greatest inclination of a stratum to the horizon.

LITHOLOGY. The science which treats of the characteristics and classification of rocks.

LOAM. A soil composed of siliceous sand, clay and carbonate of iron, with more or less oxide of iron, magnesia and various salts, and also decayed animal and vegetable matter.

LOESS. A division of the Quaternary System, Lacustral Age. Common along the Mississippi and many of its tributaries.

LOWER CARBONIFEROUS PERIOD. The first, or earliest, division of the Carboniferous Age.

LYCOPODIACEÆ. An order of plants which includes the *lycopodium*.

MAGNESIA. A white, tasteless, earthy substance.

MAMMALIA. Vertebrate animals that suckle their young.

MAMMOTH. An extinct elephant, fossil remains of which have been found on both American continents.

MARL. A mixture of carbonate of lime, clay and sand in varying proportions. A valuable fertilizer.

MASTODON. An extinct gigantic mammal, resembling the elephant, so called from the conical (nipple-shaped) protuberances on its molar teeth (grinders).

MATRIX. The earthy or stony substance in which metallic ores or crystalline minerals are found.

MAXIMUM. Greatest.

MESOZOIC. The Secondary period. Literal meaning, "Middle life."

METAMORPHIC. Rocks or minerals which have undergone changes in form or shape since their original deposition; usually applied to changes made by heat.

METEORITE. Same as Aerolite; which see.

METRE. A French measure of length, equal to 39.368 inches. (See, also, Centimetre and Millimetre.)

MICA. A mineral generally found in thin elastic laminae, soft, smooth, and of various colors and degrees of transparency. It is one of the constituents of granite.

MICA SLATE. A schistose rock, consisting of mica and quartz, with, usually, some feldspar. The lowest stratified rock except gneiss. It bears no fossils.

MILLIMETRE. A French measure of length, equal to .039368 of an inch.

MILLSTONE GRIT. A hard, gritty, sandstone, a kind of conglomerate, found under the Coal Measures, sometimes containing quartz pebbles.

MINERAL. Any inorganic natural object, whether solid, liquid or gaseous.

MIOCENE. The middle division of the Tertiary rocks, in which the minority of the organic fossils are of recent species.

MOLLUSCA. Invertebrate animals, having a soft, fleshy body (whence the name) which is inarticulate and does not radiate internally. Includes the shell-fish proper.

MONOCOTYLEDONS. A class of plants having but one seed lobes in the embryo.

MORAINES. Longitudinal deposits of stony detritus found at the bases and along the edges of glaciers.

MURAL. Belonging or relating to a wall.

NAUTILUS. A fossilized and living genus of the Molluscan Cephalopoda.

NIAGARA GROUP. A division of the Upper Silurian system.

NODOSITY. Knotty.

REPORT OF STATE GEOLOGIST.

NODULE. A rounded mass of irregular shape.

NUCLEUS. A kernel; a central mass or point about which other matter is gathered.

OBSIDIAN. A glassy lava. Volcanic glass. It consists of silica and alumina, with a little potash and oxide of iron.

OOLITE. An epoch in the Jurassic Age. A variety of limestone consisting of round grains like the roe of a fish. Name is derived from two Greek words, which mean "Egg-stone."

OOLITIC. Resembling Oolite.

OPERCULUM. The lid which protects the gills of fishes and closes the opening of certain univalve shells.

ORES. Mineral bodies from which metals are extracted.

ORGANIC REMAINS. Fossilized remains of animals or plants.

ORTHIS. A genus of *Brachiopoda*, named in allusion to the straight hinge-line.

ORTHOCERAS. A family of the *Nautilidae*, in which the shell is straight, or nearly so.

OUTCROP. That part of an inclined stratum which shows at the surface of the ground.

OVERLYING. When one stratum lies over or overlaps another it is said to be overlying.

OXIDE. The combination of oxygen with any metallic base.

OXYGEN. Vital air.

PALEONTOLOGIST. One skilled in paleontology.

PALEONTOLOGY. The science of the ancient life of the earth, or of the fossils which are the remains of such life.

PALEOZOIC. Applied to the older division of geological time and to the fossil-bearing rocks of the Silurian, Devonian and Carboniferous Ages.

PARAFFINE. A white translucent, crystalline substance, obtained from the distillation of mineral and vegetable tar.

PEAT. Accumulation of vegetable matter on and near the surface of the earth, in moist places. It is intermediate between pure vegetable matter and lignite, 80 parts in 100 being combustible, and is, therefore, often dried and then used for fuel.

PECOPTERIS. A genus of fossil fern.

PECTEN. A genus of bivalve mollusks.

PENTAGONAL. Having five angles.

PERMIAN. The epoch following the Coal-Measure epoch, and regarded as closing the Carboniferous Age and the Paleozoic era.

PETROLEUM. Mineral oil.

PHENOMENON. Appearance, visible quality, event.

PHONOLITE. Clinkstone, a species of compact basalt, which is sonorous when struck.

PINNATED. Winged.

PLEISTOCENE. Quaternary. Pertaining to the epoch or to the deposits following the Tertiary and immediately preceding man. Compounded from two Greek words, meaning "most new."

PLIOCENE. The upper division of the Tertiary period, meaning "more new."

PLUMOSE. Having a feathery appearance.

PLUTONIC ROCKS. Those deriving form from igneous action.

POLYPI. Radiates, having many feet (whence the name) or feelers.

POLYZOA. The lowest order of *Mollusca*, in which many animals are united in one structure. A compound group among the *Bryozoa*.

POROUS. Containing pores.

PORPHYRY. Originally applied to a red rock found in Egypt. A compact feldspathic rock containing disseminated crystals of feldspar, the latter, when polished, forming small, angular spots, of light color, thickly sprinkled over the surface.

PRECIPITATION. The act by which a body abandons a liquid, in which it is dissolved or suspended, and becomes deposited at the bottom.

PRIMITIVE (OR PRIMARY) ROCKS. Rocks supposed to be first formed, being irregularly crystallized, aggregated without a cement, and containing no organic remains, such as granite, gneiss and the like.

PERMO-CARBONIFEROUS. Upper Coal-Measures (?). See "Coal-Measures," ante.

PRODUCTUS. An extinct genus of *Brachiopoda* in which the shell is "eared," or has its lateral angles drawn out.

PROTOZOA. The lowest division of the animal kingdom.

PTERODACTYL. A winged saurian; a fossil reptile which had the little finger of the hand greatly elongated, for the purpose of bearing a membranous wing. Meaning "wing finger."

- PTEROPODA.** A class of *Mollusca* which swim by means of fins attached near the head. Meaning "wing-foot."
- PUDDING-STONE.** A coarse conglomerate, composed of siliceous or other pebbles united by a cement.
- PUMICE.** Vesicular obsidian.
- PYRIFORM.** Pear-shaped.
- PYRITES.** A combination of sulphur with iron, copper, cobalt or nickel.
- QUAQUA-VERSAL.** Dipping toward all points of the compass from a central point, as beds of lava around a crater.
- QUARTZ.** Pure silicic acid, occurring in pellucid, glassy crystals, having the form of a six-sided prism, terminated at each end by a pyramid. The crystals are usually clear, but sometimes are variously colored, more or less transparent, and even opaque.
- QUARTZITE.** Granular quartz; sandstone that has been changed by metamorphic action to a hard quartz rock.
- QUATERNARY.** Later than the Tertiary. Equivalent to the English Pleistocene.
- RADIATA.** One of the great sub-kingsdoms of animals, in which all the parts are arranged uniformly around the longitudinal axis of the body, such as star-fishes, corals, crinoids, etc.
- RASH COAL.** An impure coal.
- RECENT.** Of a date subsequent to the creation of man.
- RENIFORM.** Kidney-shaped; applied to certain minerals.
- RECEPTACULITES.** An extinct genus of *Protozoa*. Meaning, "A stone receptacle."
- REPTILIA.** The class of *Vertebrata* composing snakes, lizards, tortoises, turtles, etc. From Latin verb *repto*, "I crawl."
- RETICULATED.** Having sets of parallel fibres or lines crossed by others, likewise parallel, so as to form meshes resembling those of a net.
- RHYNCHONELLA.** A small bivalved Brachiopod, having a *rynchos* (nose or beak).
- RHYNCHONELLA OSAGENSIS.** Same as *R. Pecosii*.
- RHYNCHONELLA PECOSI.** Same as *R. Osagensis*.
- ROCK.** Any natural deposit of stony material.
- RUGOSE.** Wrinkled; full of wrinkles.
- SALT.** Any combination of an acid with a salifiable substance.
- SANDSTONE.** Any rock consisting of aggregated grain.
- SAURIAN.** Any lizard-like reptile.
- SCHIST.** Slaty rock.
- SELENITE.** A variety of gypsum.
- SEAM.** A layer of substance, more or less wide, parallel with the stratification of surrounding material.
- SEDIMENTARY ROCKS.** Those formed from materials precipitated from suspension in water.
- SEISMOLOGY.** The science of earthquakes and their characteristics.
- SERRATED.** Notched on the edge like a saw.
- SHALE.** A fine-grained rock, having a slaty structure; an indurated clay, deposited in thin layers.
- SHELL MARL.** A deposit of shells, which have been disintegrated into a gray or white pulverulent mass.
- SHINGLE.** Loose, water-worn gravel and pebbles.
- SIGILLARIA.** Fossil trees, the bark of which is covered with impressions as if made by a seal. Found in the Coal Measures.
- SILEX.** Silicic acid, generally impure, as it is found in nature, constituting flint, quartz and most sands and sandstones. Literal meaning, "Flint."
- SILICEOUS.** Composed of silicic acid.
- SILT.** Mud or fine earth deposited from running or standing water.
- SILURIAN.** The earliest of the Paleozoic formations; so called from the country of the Silures, who anciently inhabited a part of England and Wales, because the strata was most plainly developed in that country.
- SINUS.** A hollow or excavation.
- SIPHUNCLE.** A tube of membranous or calcareous nature, transversing the septa of a chambered shell.
- SLATE.** An argillaceous stone which easily splits into plates.
- SOAPSTONE.** A soft magnesian mineral, usually gray, white, or yellow; so called from its soapy or greasy feel; steatite; pot-stone.
- SPIRIFER; SPIRIFERINA.** Extinct species of *Brachiopoda*, with large spiral supports for their "arms."
- SPECIES.** The division of a genus into those derived from one common parentage.
- SPINOSA.** } Spinous; covered with
SPINOSUM. } spines.

- SPIRE.** All the whorls of univalve shells, except the one in which the aperture occurs, which is called the *body*.
- STALACTITE.** Icicle-like encrustations and deposits of lime, which hang from the roofs and sides of caverns hollowed out of limestone.
- STALAGMITES.** Encrustations of lime formed on floors of caverns hollowed out of limestone.
- STIGMARIA.** Stem-like, fossilized vegetation, often traversing the under clay of the coal, and supposed to be the roots of *Sigillaria*; which see.
- STRATUM (pl. STRATA).** A bed of earth or rock of any kind, formed by natural causes, and usually consisting of a series of layers.
- STRATIFIED.** Formed in regular beds or layers.
- STREPTORHYNCHUS.** Often called *Hemipronites*.
- STRLE.** Diminutive channels or creases.
- STRIKE.** The horizontal direction of the out-cropping edges of tilted rocks, which is always at right angles to the dip.
- SUB-CARBONIFEROUS PERIOD.** Same as *Lower Carboniferous Period*.
- SUBPLICATA.** Somewhat plicated.
- SULPHURET.** A compound of sulphur with another solid.
- SUPERIMPOSED.** Placed above.
- SUTURE.** The line of junction of two parts which are immovably connected together, like the line where the whorls of a univalve shell join, or the lines made on the exterior of a chambered shell by the margins of the septa.
- SYENITE.** A granite rock from Syene or Siena, in Egypt. It consists of quartz feldspar and hornblende.
- SYNCHRONISM.** Concurrence in time of two or more events; contemporary; simultaneousness.
- SYNCLINAL.** Formed by strata dipping toward a common line or plane, as a synclinal trough or valley. The opposite of *Anticlinal*; which see.
- TALC.** A foliated magnesian mineral of an unctuous feel, often used for tracing lines on wood, cloth, etc., which are not so easily effaced as those of chalk.
- TALUS.** A sloping heap of rock fragments lying at the foot of a precipice.
- TERMINAL.** Belonging to the end.
- TERRACE.** A shelf or bank of earth having an uniformly level surface.
- TERTIARY.** Third in order. Applied to the first period of the Age of Mammals, or Cenozoic time; also, to the rock formations of that period.
- TEST.** A shell, as of a mollusk.
- TESTACEA.** Mollusks are sometimes so called.
- TESTACEOUS.** Consisting of carbonate of lime and animal matter.
- THERMAL.** Hot, warm. Applied to springs which discharge water heated by natural agencies.
- THIN OUT.** Applied to beds or strata which grow gradually and continually thinner in one direction, until they entirely disappear.
- TRANSITION ROCKS.** The lowest uncrystalline stratified rocks, supposed to contain no fossils, and so called because thought to have been formed when the earth was passing from an uninhabitable to a habitable state.
- TRANSVERSE.** Placed cross-wise. When the breadth of a shell is greater than its length it is called transverse.
- TRAP.** A heavy, igneous rock, of a greenish-black or grayish color, generally composed of feldspar, augite and hornblende; so called because the rocks of this class often occur in large tabular masses, rising above one another like *treppe*, steps.
- TRILOBITE.** Three lobed. An extinct family of *Crustacea*, and derives its name from its body being so divided.
- TRUNCATE.** Terminating very abruptly, as if a portion had been cut off.
- TUFA.** A soft or porous stone, formed by depositions from water, usually lime-bearing, in which case the result is called calcareous tufa. Also a volcanic sandrock, rather friable, formed of agglutinated volcanic earth or scoria.
- TURBINATE.** Shaped like a top or pear.
- TURRITELLA.** A little tower or turret. A genus of gasteropods.
- UMBO.** The beak (the point immediately above the hinge) of a bivalve shell is so called, from its fancied resemblance to the "boss of a shield."
- UNCONFORMABLE.** Not lying in a parallel position; applied to rock strata.
- UNDULATION.** A wave; arranged in a wave-like manner.
- UNTO.** A pearl. A genus of mussels.

UNIVALVE. Shells consisting of but one valve or piece.

UPPER COAL MEASURES. Upper strata of the coal system.

VASCULAR. Containing numerous vessels.

VEIN. A seam or parting of any substance, more or less wide, intersecting a rock or stratum, and not corresponding with the stratification.

VENTRAL. Belonging to the belly, or the surface opposite the back, or dorsal side. Sometimes used to designate the interior surface of the body.

VERTEBRATA. The division of the Animal Kingdom which is furnished with a spinal column.

VENTRICOSA. Ventricose; inflated, swelled in the middle.

VITREOUS. Resembling glass.

VOLATILE. Capable of assuming the state of vapor, and flying off.

WHORL. One of the wreaths or turnings of the spire of univalves.

ZAPHRENTIS. A genus of rugose (wrinkled) fossil corals.

ZIGZAG. Having contrary turnings and windings.

ZOOPHYTE. A plant-animal, which seemingly partakes of the properties of both plants and animals.